

Appl. No. 10/090,576
Amdt. Dated March 4, 2004
Reply to Office action of December 17, 2003

REMARKS/ARGUMENTS

This amendment is responsive to the Office Action mailed December 17, 2003. In the Office Action, the drawings were objected to under 37 CFR 1.83 (a) and 37 CFR 1.87 (p)(4), claims 1, 3, 4, 6, 7, 16 and 17 were rejected under 35 U.S.C. 102 (e) as being anticipated by Kreizman et al. (US Patent No. 6, 117,088), claim 5 was rejected under 35 USC 103 (a) as being unpatentable over Kreizman, claims 8, 10, 11, 12, 13-15, 19, 20 were rejected under 35 USC 103 (a) as being unpatentable over Kreizman in view of Yoon (US Patent No. 5,226,426, claim 18 was rejected under 35 USC103 (a) as being unpatentable over Kreizman in view of van Hollen (US Patent No. 6,086,247), claims 19 and 20 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 2 of US patent No. 6,419,635, claim 8 was objected to due to informalities, claims 2 and 9 were objected to but were deemed allowable if rewritten in independent form, and the specification was objected to for informalities. In this amendment, Fig. 2 has been amended to include a reference numeral 24 depicting electrical output lead, the specification has been amended to reference the parent application, claims 5 and 12 have been cancelled to conform to 37 CFR 1.83 (a), and claims 19-20 have been cancelled to overcome the double patenting rejection. Applicant respectfully submits that claim 8 need not be corrected as it conforms to 35 USC 112. No new matter has been added.

Claims 1-4, 6-11, 13-18 remain pending in this application. Reconsideration in light of the above amendments and the following remarks is respectfully requested.

The specification was objected to for indicating the present invention as a "divisional" instead of a "continuation". Applicants respectfully submit that with the cancellation of claims 19-20, the claims that remain pending in this application are distinct and independent from the claims of the earlier application. In the specification, the desired text indicating that this application is a divisional application and the patent number for the parent application has been added before the section 'Background of the invention', line 5 on Page 1.

Claims define allowable subject matter over the applied art

Claims 1, 3, 4, 6, 7, 16 and 17 were rejected under 35 U.S.C. 102 (e) as being anticipated by Kreizman et al. (US Patent No. 6, 117,088). Applicant has carefully reviewed the applied reference, and respectfully traverses the rejection of independent claims 1 and 16, under 35 USC 102 as being anticipated by Kreizman. To anticipate a claim under 102, each and every element of the claim must be taught by the reference.

Applicant respectfully submits that Kreizman does not teach, disclose or suggest the claim limitations of "a

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common electrical input lead extending between said opposite end portions of said rod and disposed below said holes and having portions exposed at said holes, a plurality of spaced apart thermal sensors each formed within one of said holes of said outer insulating layer of said rod in electrical contact with said common electrical input lead of said rod and a plurality of electrical output leads each mounted to said outer insulating layer of said rod in electrical contact with a different one of said thermal sensors", as recited in the independent claim 1; and claim limitations of "providing a common electrical input signal; receiving the common electrical input signal at spaced apart locations within biological matter; producing a plurality of electrical output signals corresponding to the respective temperatures sensed" as recited in the independent claim 16.

Applicant's invention is used for pre-treatment, early detection of tumors and deals with an in situ breast temperature profile measuring probe. The measuring probe in Applicant's invention has arrays of sensors which are microscopic in size and are capable of measuring small temperature differences in and around breast tumors to enable diagnosis of cancer at an early stage (support for this can be found in the section 'Brief summary of the Invention', lines 20-30 on Page 3). Kreizman merely appears to describe a construction of a thermocouple array, for use in hyperthermic medical treatment of a tissue, in which the affected tissue is heated for regression or remission of the tumors (column 1, lines 15-25). Thus, while the Applicant's invention is used in pre-treatment diagnosis, Kreizman's apparatus, in direct contrast is used in the treatment process. In this treatment process, it is required to control and measure the temporal and spatial characteristics of the absorbed thermal dose (column 1, lines 15-35). For this purpose, more specifically, Kreizman describes a panel connector including a base with the printed circuit thermocouple arrangement (column 2, lines 20-35). Nowhere does Kreizman teach, suggest or disclose thermal sensors formed within a plurality holes of an outer insulating layer of a rod or a common electrical input lead or a plurality of output leads, each in electrical connection with a different one of the thermal sensors as described in claim 1 of Applicant's invention or the corresponding recitations in method claim 16, namely, providing common electrical signal and receiving common electrical input signal at spaced apart locations within biological matter. Kreizman's apparatus is a thermocouple, which is constructed by having five electrically conductive junctions (18a-18e) in an insulating sheet (column 3, lines 30-38). Applicant respectfully submits that the office action has wrongly construed these conductive junctions 18a-18e, as being thermal sensors, as recited in independent claims of the Applicant's invention. The thermocouple construction is based on a principle, that an electrical junction between two different metals generates a voltage, which is a function of temperature. The junction itself is not a sensor. Further, in Kreizman's thermocouple construction, one surface of the insulating sheet has five electrically conductive paths 20a-20e, formed from a first conductive material (copper) and these paths have five connector ends 24a-24e to connect to a signal processing circuit. The second surface of the insulating sheet has a similar arrangement made from second conductive material different from the first, as in a typical thermocouple construction. The second surface, in one embodiment has a common conductive path 26f connected to each of five junctions 18a-18e and has a connector end 30f for electrical connection to a signal transmission conduit (column 3, lines 38-66). Again, the applicant respectfully submits that the office action has wrongly construed the five electrically conductive paths 20a-20e as being the plurality of output leads of the

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Applicant's invention. Similarly, the common conductive path 26f has been wrongly construed to be the common input electrical lead of the Applicant's invention. The conductive paths 20a-20e and 26f are a part of thermocouple construction in Kreizman and cannot be mapped to the plurality of inputs leads and the common output lead of the Applicant's invention. Thus, the above described thermocouple arrangement of Kreizman bears no similarity to the Applicant's invention other than that both are used for temperature measurement. Kreizman is completely devoid of any teaching, disclosure or suggestion that can lead to the above mentioned claim limitations of independent claims 1 and 16.

Thus the Applicant respectfully submits that the independent claims 1 and 16 are not anticipated by Kreizman under 35 USC 102 and therefore, are allowable. Claims 3, 4, 6, 7 depend directly or indirectly from claim 1, and claim 17 depends directly from claim 16. Thus claims 3, 4, 6, 7 and 17 are similarly allowable.

Claim 5 was rejected under 35 USC 103 (a) as being unpatentable over Kreizman. Claim 5 has been cancelled in view of drawing objection.

Claims 8, 10, 11, 13-15, 19, 20 were rejected under 35 USC 103 (a) as being unpatentable over Kreizman in view of Yoon (US Patent No. 5,226,426). Claims 19 and 20 have been canceled and therefore the rejection for these claims has been obviated. Applicant respectfully traverses the rejection of independent claim 8 under 35 USC 103(a) as being unpatentable over Kreizman in view of Yoon.

To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.

Applicant respectfully submits, that as explained above, in relation with the 102 argument, Kreizman does not teach, suggest or disclose the claim limitations of independent claim 8. Specifically, Kreizman does not teach, suggest or disclose the following claim limitations of independent claim 8, "a common electrical input lead extending between said opposite end portions of said rod and disposed below said holes and having portions exposed at said holes, a plurality of spaced apart thermal sensors each formed within one of said holes of said outer insulating layer of said rod in electrical contact with said common electrical input lead of said rod and a plurality of electrical output leads each mounted to said outer insulating layer of said rod in electrical contact with a different one of said thermal sensors".

The secondary reference of Yoon does not overcome the above noted deficiencies of Kreizman. Yoon merely describes a surgical safety penetrating instrument including a tubular needle and a movable probe. Regardless of this disclosure, the above mentioned claim limitations of independent claim 8 are still not described in Yoon. Therefore, the combination of Yoon with Kreizman will not yield the applicant's invention as recited in independent claim 8.

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Accordingly, Applicant respectfully submits that independent claim 8 define allowable subject matter over the applied art. Claims 10,11, 13-15 depend directly or indirectly from claim 8. Applicant respectfully submits that claim 8 is patentably distinct from the applied references for the reasons discussed above and that claims 10, 11, 13-15 are similarly allowable over the applied references.

Claim 12 was rejected under 35 USC 103 (a) as being unpatentable over Kreizman in view of Yoon. Claim 12 has been cancelled in view of drawing objection.

Claim 18 was rejected under 35 USC103 (a) as being unpatentable over Kreizman in view of van Hollen (Us Patent No. 6,086,247). Applicant respectfully submits that as explained above, in relation with the 102 argument, Kreizman does not teach, suggest or disclose the claim limitations of independent claim 16. Specifically Kreizman does not teach, suggest or disclose the following claim limitations of "providing a common electrical input signal; receiving the common electrical input signal at spaced apart locations within biological matter;" as recited in the independent claim 16. The secondary reference of van Hollen does not overcome the above noted deficiencies of Kreizman. van Hollen merely describes a differential temperature sensor device for detecting differential temperatures in a human breast with improved contact between the sensor and the breast. Regardless of this disclosure, the above mentioned claim limitations of independent claim 16; are still not described in van Hollen. Therefore, the combination of van Hollen with Kreizman will not yield the applicant's invention as recited in independent claim 16. Thus, the applicant respectfully submits that independent claim 16 defines allowable subject matter over the applied art. Claim 18 depends indirectly from claim 16 and is similarly allowable.

Accordingly, Applicant respectfully submits that the Office Action did not make a prima facie case of obviousness for the independent claims 8 and 16 and claims 10, 11, 13-15 depend directly or indirectly from claim 8 and claim 18 depends indirectly from claim 16. Applicant respectfully submits that claims 8 and 16 are patentably distinct from the applied references for the reasons discussed above and that claims 10, 11, 13-15, and 18 are similarly allowable over the applied references.

In view of the foregoing remarks, Applicants respectfully request withdrawal of the rejections under 35 USC 102(e) and 103(a).

Double Patenting

Claims 19 and 20 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 2 of US patent No. 6,419,635. Claims 19 and 20 have been canceled

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and therefore the double patenting rejection has been obviated. Withdrawal of the rejection is respectfully solicited.

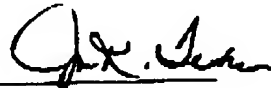
Summary

In view of the foregoing, Applicant respectfully submits that the application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are respectfully requested.

Should the Examiner believe that anything further is needed to place the application in even better condition for allowance, the Examiner is requested to contact applicant's undersigned representative at the telephone number below.

Respectfully submitted,

By



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